

## Anaspidesidae, a new family for syncarid crustaceans formerly placed in Anaspididae Thomson, 1893

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**ABSTRACT.** The anaspidean syncarid shrimps of the genera *Anaspides* Thomson, 1894, *Allanaspides* Swain, Wilson, Hickman & Ong, 1970, and *Paranaspides* Smith, 1908, have long been placed in the family Anaspididae Thomson, 1893. Anaspididae Thomson, 1893, however, was formed on a homonymous type genus, *Anaspis* Thomson, 1893, preoccupied by *Anaspis* Geoffroy, 1762 (Insecta: Coleoptera), and is therefore invalid. Anaspididae is also a junior homonym of Anaspidinae Mulsant, 1856 (Coleoptera), and is likewise invalid. There being no synonyms available in place of Anaspididae, we establish a new family, Anaspidesidae, to accommodate taxa previously placed in Anaspididae.

**KEYWORDS.** Crustacea; Anaspidea; Anaspididae; Anaspidinae; Tasmania; freshwater; nomenclature.

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The endemic freshwater Tasmanian shrimps of the family Anaspididae Thomson, 1893, are best known from the iconic *Anaspides tasmaniae* (Thomson, 1893), often thought of as a “living fossil” (Ahyong, 2016). *Anaspides* Thomson, 1894 was initially thought to reside among the now defunct Schizopoda, in proximity to mysidaceans (Thomson, 1893, 1894). Calman (1897, 1904), however, recognized the syncarid affinities of *Anaspides*, for which he erected the order Anaspidea Calman, 1904.

Thomson (1893) originally described *Anaspis tasmaniae* in a new genus, *Anaspis*, and a new family, Anaspidae. Unfortunately, *Anaspis* Thomson, 1893, being preoccupied by *Anaspis* Geoffroy, 1762 (Insecta: Coleoptera), rendered Thomson’s new genus name invalid. Likewise, the name

Anaspidae Thomson, 1893, is also invalid, having been formed on a homonymous type genus (Article 39, International Code of Zoological Nomenclature; hereafter, the Code, ICZN, 1999) and being at the same time a homonym of Anaspidinae Mulsant, 1856 (based on *Anaspis* Geoffroy, 1762). On advice from T. R. R. Stebbing, Thomson (1894: 38) proposed a replacement genus name, selecting *Anaspides* “so that the name of the new order may not have to be changed”. Thomson (1894) was incorrect in retaining the spelling Anaspidae, corrected by subsequent authors (Smith, 1908) to Anaspididae, the family-group name now in use for more than a century for Thomson’s taxon. Although Thomson (1894) replaced *Anaspis* Thomson, 1893, with *Anaspides*, he did not act to create a new family in place of

his invalid Anaspidae, nor can it be inferred that it was his intention. Therefore, Thomson's invalid Anaspidae (and its corrected spelling Anaspididae) dates to 1893, rather than 1894 as assumed by some sources. Being preoccupied by Anaspidinae Mulsant, Anaspididae Thomson is invalid and no family-group synonyms are available to take its place. Therefore, a new family, Anaspidesidae, is proposed herein to accommodate taxa previously placed in Anaspididae Thomson. Following Recommendation 29A of the Code (ICZN, 1999), the new family takes the full name of its type genus, *Anaspides*, as its stem.

## Taxonomy

### Anaspidesidae fam. nov.

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**Diagnosis.** Rostrum broadly triangular. Cephalon and pereonite 1 fused; cervical groove distinct. Pereonites 2–8 shorter than pleonites; terga smooth. Pleonites with smooth terga; pleonite 6 unarmed or with short spines along posterior margin. Telson longitudinally subquadrate to subtriangular, dorsoventrally flattened, apex bluntly angular to subtruncate. Eyes pedunculate. Antenna 2 with lamellar scaphocerite. Mandible with palp. Thoracopod 1 forming maxilliped; exopod liguliform; epipods present or absent. Thoracopods 2–7 endopod similar; 2 epipods; exopods 2–6 slender, flagellum multiannulate; exopod 7 simple, lamellate or absent. Thoracopod 8 without exopod or epipods. Pleopods 1–5 exopod multiannulate. Pleopods 1–2 endopod modified as gonopods in males. Pleopods 3–5 endopod reduced or absent, simple. Uropodal rami lamellar, exopod with weak, partial diaeresis. Uropods lamellar, forming tailfan with telson.

**Type genus.** *Anaspides* Thomson, 1894.

**Composition.** *Anaspides* Thomson, 1894: *A. clarkei* Ah Yong, 2015; *A. eberhardi* Ah Yong, 2016; *A. jarmani* Ah Yong, 2015; *A. richardsoni* Ah Yong, 2016; *A. spinulae* Williams, 1965; *A. swaini* Ah Yong, 2015; *A. tasmaniae* (Thomson, 1893).

*Allanaspides* Swain, Wilson, Hickman & Ong, 1970: *Al. helonomus* Swain, Wilson, Hickman & Ong, 1970; *Al. hickmani* Swain, Wilson & Ong, 1971.

*Paranaspides* Smith, 1908: *P. lacustris* Smith, 1908; *P. williamsi* Ah Yong, Schwentner & Richter, 2017.

**Remarks.** Eleven species in three genera are recognized in Anaspidesidae fam. nov., all endemic to Tasmania, Australia (Ah Yong, 2016; Ah Yong *et al.*, 2017). Although the taxonomic position and composition of the new family is congruent with that of Thomson's Anaspididae, we take the opportunity to update contemporary diagnoses applicable to Anaspidesidae (e.g., Lake *et al.*, 2002; Coineau & Camacho, 2013, as Anaspididae). Namely, in anaspidesids, the telson is distally truncate to bluntly angular (rather than pointed or spinular), the maxillipedal exopod is flattened (instead of tubular), and the maxilliped is not clearly eight-segmented, with the demarcation between the proximal two articles usually scarcely discernable.

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